

Observations on the *campo*, *cerrado* and forest avifaunas of eastern Dpto. Santa Cruz, Bolivia, including 21 species new to the country

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The grasslands (*campos*) and open, grassy woodlands (*cerrados*) of central Brazil and extreme eastern Bolivia are unusually rich in endemic species of plants and animals (Müller 1973, Cracraft 1985). More than 20 bird species are restricted to this vegetation on the Brazilian Plateau, and many of these species are threatened by habitat loss due to the extraordinarily rapid rate of environmental degradation caused by large-scale mechanized agriculture and cattle-ranching. Annual burning and overgrazing of grasslands throughout central Brazil have led to severe declines in many of the grassland species (Goriup 1988). The identification and protection of representative examples of these grassland ecosystems should be placed high on the list of conservation priorities in Brazil and adjacent eastern Bolivia.

Until recently, the plant and animal communities of eastern Bolivia were largely undescribed. The Serranía de Huanchaca (also known as the Serranía de Caparuch), a large (150 × 75 km) section of the Brazilian shield, isolated from similar areas to the east, remained unexplored. The Bolivian sections of this plateau are now protected within the Parque Nacional Noel Kempff Mercado (PNNKM). Recent botanical surveys of the area, although brief, revealed the presence of extensive areas of several types of upland grasslands, including *campo limpo*, *campo sujo*, and *campo rupestre*, as well as a variety of wooded habitats characteristic of central Brazil, such as *cerrado*, *cerradão*, and gallery forest (T. J. Killeen, pers. comm.). Brazilian examples of these habitats have been described in detail by Goodland (1971) and Eiten (1978).

We report here the results of continuing ornithological surveys of the PNNKM and adjacent lands of the Reserva Forestal "Bajo Paraguá". These areas form the northeastern corner of the Department of Santa Cruz in eastern Bolivia. Field work in 1989 spanned four months (mid-June to mid-October) and concentrated on habitats and sites not surveyed on a 1988 expedition to the same region (Bates *et al.* 1989). This inventory is a joint project involving personnel from the Museum of Natural Science (Louisiana State University, LSUMNS), the Museo de Historia Natural "Noel Kempff Mercado" (Universidad Autónoma "Gabriel Rene Moreno", Santa Cruz de la Sierra, Bolivia, MHNNKM), and the PNNKM. Our focus on this expedition was the *campos*, *cerrados*, and islands of forest vegetation on top of the Serranía de Huanchaca, with remaining time spent in forests along the western base of the plateau (along the Río Paraguá).

Serranía habitat and localities. The top of the plateau (500,000 ha) is a mosaic of naturally isolated Amazonian and deciduous forest patches associated with water courses. These forest patches are separated by a spectrum of open country habitats ranging from pure *campo* to dense *cerrado*. "Camp 1" in the northern part of the serranía was in a forest fragment of c. 600 ha, 21 km south of Catarata Arco Iris (13°55'S, 60°45'W, elev. 670 m). A satellite camp was also set up in a c. 1500 ha fragment, separated from the 600 ha fragment by 1 km of *campo*. Catarata Arco Iris is the main waterfall on the Río Paucerna as it runs off the serranía to the north. From these camps, birds were surveyed in both forest and open country from 24 June through 18 July. Participants were John M. Bates (JMB), Angelo Capparella (APC), Maria Dolores Carreño, Abel Castillo (AC), Jorge Cayalo, Curtis Marantz (CAM), and Manuel and Marta Sánchez.

"Camp 2" was at the southern end of the plateau in a forest fragment (c. 500 ha) surrounded by open *campo* with small patches of *cerrado* and strips of gallery forest. In addition, *campo rupestre* occurred along the rocky crests and upper slopes of ridges in the open *campo*. Although never occurring over extensive areas, *campo rupestre* is characterized by a highly endemic flora of grasses, bushes and trees. Camp 2 is c. 45 km east of the town of Florida (14°34'S, 60°40'W, elev. 720 m), and was visited briefly on 24–26 August, and studied intensively from 26 September through 15 October. Participants were JMB, AC, Tristan J. Davis (TJD), Hugo H. Hurtado, Theodore A. Parker (TAP) and Gary H. Rosenberg (GHR).

West bank of the Río Paraguá localities. Three areas west of the Río Paraguá were surveyed, including two forest sites 10 and 13 km SSW of Piso Firme and flooded grassland (*pantanal*) 6 km SSW of Piso Firme. Piso Firme (13°35'S, 60°55'W, elev. c. 250 m) is a small town on the west bank of the Río Paraguá (formally in Depto. Beni), c. 4 km from the Paraguá's confluence with the Río Iténez (the Spanish name; Río Guaporé is the Portuguese name; Paynter *et al.* 1975). These sites were all worked between 19 July and 4 August. Participants were the same as those listed for camp 1.

The habitat west of the Paraguá consists of low-canopy, evergreen tropical forest, which had been harvested to varying extents for selected palm and lumber trees. Our camps were along a road into forest where palm hearts were being harvested. Adjacent to the site 13 km SSW was a 30 ha patch of dense *cerrado* surrounded by forest.

Los Fierros. Tall forests in this area at the western base of the serranía, but east of the Río Paraguá, were studied and described previously (Bates *et al.* 1989). This very diverse region was visited again in 1989 from 28 August through 25 September by TJD, with briefer visits by TAP, JMB and AC. In addition to collecting specific species in the tall forest, we concentrated our efforts in nearby seasonally flooded grassland with small patches of *cerrado* woodland.

Remsen & Traylor (1989) listed 1274 species for Bolivia, of which 306 have been reported for the PNNKM (Bates *et al.* 1989). The 1989 expedition produced 21 new species for Bolivia, and 224 new species for

the PNNKM (Bates *et al.* in prep.). We report here on the 21 species new for the country (indicated by an asterisk following the name) and provide notes on some other poorly known species. The 21 new species came from a variety of habitats: Amazonian forest (5), forest edges/gallery forest (9), *campo/cerrado* (7). Gonad data are given only for specimens considered to be in breeding condition. All specimens collected are housed in the LSUMNS and the MHNNKM. Tape recordings are housed in the Library of Natural Sounds (LNS), laboratory of Ornithology, Cornell University.

We also include some unpublished records from collections made in 1964 and 1965 by Javier Cuello of the Museo Nacional de Historia Natural, Montevideo, Uruguay. Cuello collected along the Río Mamoré and Río Iténez in Dpto. Beni and deposited this material at the American Museum of Natural History (AMNH). The collection includes Bolivian specimens that predate several published "first records" for Bolivia (Cabot *et al.* in press, Bates *et al.* 1989). In addition to being first records for the country, these are also new records for Dpto. Beni and represent additional Bolivian localities to the northwest of our sites, providing further evidence that the major headwater river of the Río Madeira that separates allotaxa of the Inambari and Rondonian areas of endemism (*sensu* Cracraft 1985) is the Río Mamoré.

Species accounts

RUSSET-CROWNED CRAKE *Laterallus viridis**

On 8 July, APC observed an individual perched low in a shrub in tall, well-drained grassland with scattered bushes and small trees near camp 1. This bird was not collected. Subsequently, we learned that J. Cuello collected two individuals on 2 May 1964 (AMNH 791736, 791737) on the Bolivian side of the Río Iténez near the mouth of the Río Mamoré. These represent the first documented records of this widespread species for Bolivia. Niethammer's (1953) sight record of this species from Dpto. La Paz was considered hypothetical by Remsen & Traylor (1989).

BLACK-BELLIED CUCKOO *Piaya melanogaster*

TAP and JMB saw a pair and heard another individual in the canopy of stunted forest (c. 14 m tall) on sandy soil near Los Fierros on 29 August. TJD collected a male in the company of another bird in the same area on 6 September and saw solitary individuals inside and in tall forest edge around Los Fierros on 10 and 21 September. The only other Bolivian records of *P. melanogaster* are from Dpto. Pando (Parker & Remsen 1987) and Dpto. La Paz, along the upper Río Madidi (sight records, TAP pers. obs.).

STYGIAN OWL *Asio stygius**

On 4 July, AC and APC flushed a pair of this species from a wooded ravine in brushy *campo* and collected a female (MHNNKM). The only previous report for Bolivia, a sight record from upper montane cloud-forest in Dpto. Cochabamba (Fjeldså & Krabbe 1990) was considered hypothetical by Remsen & Traylor (1989).

LONG-TAILED POTOO *Nyctibius aethereus**

The distinctive *ahoóo* call of this poorly known species was regularly heard in the canopy of tall forest at Los Fierros, where one or two individuals were taped by TAP and GHR (LNS) between 28 August and 15 October. Two individuals were especially vocal on the later date, under a full moon.

Although this is the first Bolivian record of *N. aethereus*, the species has recently been found in numerous localities in eastern Peru (TAP pers. obs.) and has now been recorded from Argentina (Stranek & Johnson 1990). It has undoubtedly been overlooked because it prefers the interior of forests versus forest-edges frequented by *N. griseus* and to a lesser extent by *N. grandis*. *N. aethereus* may prove to be more common than the latter species in many *terra firme* forests of upper Amazonia.

LEAST NIGHTHAWK *Chordeiles pusillus**

This small nighthawk is apparently fairly common, at least from July through October, in dry grasslands of PNNKM. In July, CAM and others flushed one or two individuals on several occasions from roosting sites on gravelly slopes with sparse vegetation near camp 1. The first Bolivian specimen was collected by TAP on 30 August as it foraged at dusk over dry (but seasonally flooded) grasslands near Los Fierros. This individual is a female with heavy fat. On 29 September, TJD collected a male, with no fat and 4×5 mm testes, over a rocky hillside near camp 2. In this area, we repeatedly saw pairs of birds flying together at dusk. GHR recorded vocalizations of one individual (LNS) as it foraged low over open grassland.

CHAPMAN'S SWIFT *Chaetura chapmani**

Late August sightings of pairs or small groups of up to 6 large, all-dark swifts flying over dry (seasonally flooded) grasslands on several occasions near Los Fierros and on the southern part of the plateau are believed to be this species (TAP). These birds were seen both alone and in the company of large flocks of White-collared Swifts *Streptoprocne zonaris*.

SPOTTED PUFFBIRD *Bucco tamatia**

Four individuals mist-netted in forest fragments at camp 1 in early July, and four others collected by TJD in stunted forest on sandy soil near Los Fierros in early September, are the first records for Bolivia. A female collected at Los Fierros had an enlarged ovary, an ovum 15 mm in diameter and an oviduct 12 mm wide. This widespread species is generally restricted to seasonally flooded (*varzea*) forests (Remsen & Parker 1983), but also occurs in adjacent second-growth woodlands (TAP pers. obs.).

CAMPO MINER *Geobates poecilopterus**

This *campo* endemic was first found by JMB on 2 October in recently-burned open *campo* near a small stream at camp 2. Over the next few days up to eight additional miners were observed displaying over similar (burned) habitat. Three males collected at this time all had enlarged testes averaging 4×9 mm. The display by the males consisted of a hovering flight 3–10 m above the female on the ground below. During this laboured flight, males displayed their chestnut-and-white underwing coverts and gave long musical rattles (LNS). Flights and rattles lasted for up to

30 seconds. Display flights were observed for only 6 days, and the birds thereafter became silent and inconspicuous. Despite extensive coverage, no *G. poecilopterus* had been found in this area in late August nor in late September, before fires swept through a large portion of the grasslands on this part of the plateau. This species may disperse facultatively to breed in recently-burned grasslands, which may explain its apparently local distribution in the *campos* of central Brazil (TAP pers. obs.).

RUFOUS-WINGED ANTSHRIKE *Thamnophilus torquatus*

On top of the serranía, this antshrike was uncommon and inconspicuous at camp 1 and apparently rare at camp 2 where only one individual was seen. The species frequents shrubby areas with scattered trees in the transitional zone between more open *cerrados* and gallery forests. It was also encountered in thickets near streams where Barred Antshrikes *T. doliatus* were also seen. The only previous report of *T. torquatus* in Bolivia is from the "plains of Guayaros" south of the park (Peters 1951).

LARGE-BILLED ANTWREN *Herpsilochmus longirostris*

On 29 September, TJD collected a female of a pair from the canopy of a small (< 1 ha) patch of gallery forest surrounded by grassland near camp 2. He collected a pair on 6 October in the same area. GHR and JMB saw a male in similar habitat along a stream flowing into a larger forest island (> 200 ha) on 7 October. TJD found several additional pairs in other isolated patches of gallery forest along small streams on 8 and 11 October. The species was replaced by *H. rufimarginatus* in larger forest islands. The 4 specimens collected by TJD, and two males (AMNH 792009, 792010) collected in Dpto. Beni along the Río Iténez "frente Costa Margues" by J. Cuello on 6 and 17 September 1964 (Davis & O'Neill 1986), are the only Bolivian specimens. Sight records reported as *Herpsilochmus pileatus* by Remsen (1986) at Estancia Inglaterra, Dpto. Beni, are also believed to have been this species.

YELLOW-BREASTED FLYCATCHER *Tolmomyias flaviventris flaviventris**

This canopy species was fairly common along the edges of forest islands on the Serranía and was also found in somewhat stunted forest on sandy soils near Los Fierros and Piso Firme. AC collected two individuals near camp 1 on 1 and 3 July, and a third on 31 July south of Piso Firme. These specimens represent the first records of nominate *T. f. flaviventris* for Bolivia. TAP (unpubl. obs.) has found the call notes and songs of the subspecies with bright yellow underparts (*flaviventris*, *aurulentus*, *collingwoodi*, and *dissors*) to be different in quality and pattern from the subspecies with duller underparts (*subsimilis*, *viridiceps* and *zimmeri*). Vocalizations of the latter forms consist of clear explosive *chip* notes usually delivered in an accelerating series. The first four subspecies give shorter series of buzzy, thin *ssst* or *tseeep* notes (recordings in LNS). Vocal as well as morphological characters (Zimmer 1939) strongly suggest that the two groups represent at least two biological species: *T. flaviventris* and *T. viridiceps*. Specimens of "*borbae*" from along the Rio Madeira, Brazil, considered by Hellmayr (1927) to be intermediate between *flaviventris* and *viridiceps*, were later assigned to *viridiceps* by Zimmer (1939). Thus, these *Tolmomyias* are similar to numerous other species pairs that are also

separated by the Rio Madeira (Hellmayr 1910, Haffer 1969, Cracraft 1985).

PLANALTO TYRANNULET *Phyllomyias fasciatus*

The first Bolivian record for this species was an individual collected in 1987 from a site at the western base of the serranía near Los Fierros (Cabot *et al.* 1988). TAP, JMB and AC observed and tape-recorded a pair calling in the same area on 28 August. These individuals were in forest-edge canopy *c.* 15–20 m above the ground, within 100 m of tall *cerrado* woodland. On 28 September, TJD observed a pair in the canopy of open *cerrado* woodland at the edge of the large forest island at camp 2. He collected a calling male on 1 October, with a left testis 9 × 5 mm, in the same general area. The Huanchaca specimen is greyer above than four specimens from southeastern Brazil referred to *P. f. brevirostris* (3 LSUMNS and 1 University of Kansas). Thus, the Huanchaca specimen presumably represents *P. f. fasciatus* of central Brazil. A new form of this species has also been found recently in the Andean foothills of Dpto. Beni (Parker *et al.* 1991).

RUFIOUS-TAILED ATTLA *Attila phoenicurus**

On 25 August TAP, JMB, and TJD tape-recorded songs (LNS) of an individual singing from the canopy of the large forest island at camp 2. TJD and JMB heard an individual singing again in the same area in late September but were unable to collect the bird. The species has been reported from western Mato Grosso, and as far north as Amazonas, in southern Venezuela (Traylor 1979), but is only found regularly (from October through January) in the forested mountains of Rio de Janeiro (TAP pers. obs., Sick 1984) and Rio Grande do Sul (Belton 1985). The southeastern population is apparently migratory (Belton 1985), and widely scattered Amazonian records may represent austral migrants.

ZIMMER'S TODY-TYRANT *Hemitriccus aenigma**

This little-known species was uncommon in the canopy of stunted forest on sandy soil near Los Fierros. Widely-spaced pairs foraged from *c.* 8–12 m above the ground within foliage and vine tangles. Five pairs were found along *c.* 1.5 km of this habitat (TAP), and TJD collected 7 individuals in late August and early September in the same general area. In August 1990, TAP and Omar Rocha found 2–3 *H. aenigma* in the canopy of stunted forest along the edge of a large forest island near camp 1, at the northern end of the serranía, as well as in taller forest on lateritic soil at Versalles, Dpto. Beni (Parker *et al.* 1991). Vocalizations of *H. aenigma* consist of a variety of short trills and twittering notes (LNS) reminiscent of the calls of the Eared Pygmy-tyrant *Myiornis auricularis*. These notes, while loud, are ventriloquial. This species was, until recently, known only from the type series collected on the right bank of the Rio Tapajos, western Pará, Brazil (D. F. Stotz pers. comm.).

RUFIOUS-SIDED PYGMY-TYRANT *Euscarthmus rufomarginatus**

On 25 June, JMB collected a female from a pair in tall grass mixed with scattered bushes and small trees (*campo sujo*) near camp 1. CAM later taped two other individuals in the same area (LNS). A few other individuals were located during October fieldwork at camp 2 (TJD, JMB). These

represent the first records of the species for Bolivia. TAP and O. Rocha found and studied four additional pairs near camp 1 in late August 1990; details of these observations will be reported elsewhere (Parker & Willis MS). This species has apparently declined throughout most of its Brazilian range due to the over-grazing, over-burning and conversion of its grassland habitat into agricultural land (Goriup 1988). The Huanchaca plateau may support the largest remaining tracts of pristine *campo sujo* habitat anywhere.

CRESTED ELAENIA *Elaenia cristata**

This species was common in *cerrado* woodland and along the edges of gallery forest at the north end of the serranía throughout June. A large series of specimens and numerous observations represent the first records for Bolivia. Although individuals were noted in pairs and seemed to be territorial (JMB pers. obs.), the species was curiously scarce at the same site in August 1990 (TAP pers. obs.), when far outnumbered by both *E. flavogaster* and *E. chiriquensis*. We reserve judgment on the seasonal status of *E. cristata* in the park, until more data are available on the seasonal distributions of all of the 6 species of *Elaenia* that have been recorded.

HELMETED MANAKIN *Antilophia galeata**

This species was common in gallery forests and along the edges of larger forest islands at camp 2. One female was also mist-netted in a forest fragment at camp 1. Males were vocal, giving a variety of rich slurred whistles as they moved from exposed perch to perch in the forest understory and middlestory. They were found singly and were dispersed, barely within earshot of neighbouring males. Thus, they did not appear to be engaged in any type of communal display. A female collected on 26 September at camp 2 had an enlarged ovary and thinly shelled egg in its oviduct. Miguel Marini (*in litt.*) has pointed out that Ihering (1898) included Bolivia in the range of this species; however, no precise Bolivian locality was given, and Remsen & Traylor (1989) did not include the species as occurring in Bolivia.

BLACK MANAKIN *Xenopipo atronitens**

A female mist-netted at the edge of a forest fragment at camp 1 on 13 July, and an immature male netted in the island of *cerrado* woodland surrounded by closed-canopy evergreen forest 13 km SSW of Piso Firme on 31 July represent the first Bolivian records for this species. This poorly known bird occurs primarily in islands of stunted forest on sandy soil both north and south of the Amazon (TAP pers. obs.). The species has also been found along the lower Río Heath, Peru, within 5 km of the Bolivian border (Graham *et al.* 1980) and no doubt occurs in stunted forests of the intervening Departments of northern Bolivia.

PALE-BELLIED TYRANT-MANAKIN *Neopelma pallescens**

Two individuals were mist-netted and another was collected by JMB in forest fragments at camp 1. The bird collected by JMB was repeatedly giving a loud call note from 1 m up in gallery forest understory at the edge of a forest fragment. These are the westernmost records for this species, as well as the first Bolivian records. In lowland forests along the Río Paucerna at the western base of the serranía, we have recorded only

N. sulphureiventer, which has not been found on top of the plateau. These species had not been known to occur in such close proximity.

POMPADOUR COTINGA *Xipholena punicea**

On 30 August, TAP saw a male Pompadour Cotinga displaying to three females 35 m up in forest canopy along a road near Los Fierros. TJD collected a lone female in the same area on 10 September. This bird had an ovum 9 mm in diameter, an oviduct 13 mm wide and a brood patch. Our records are the first for Bolivia and the southernmost for the species, which was rare at a site along the Río Ji-Paraná in Rondonia, Brazil (D. F. Stotz, in Remsen & Traylor 1989). *X. punicea* is known from only a few localities south of the Amazon.

CURL-CRESTED JAY *Cyanocorax cristatellus**

This species was fairly common and conspicuous in open *cerrado* and gallery forest-edge near camp 2, and one small flock was seen in *cerrado* woodland at the western base of the serranía in late August (TAP). In August, 1990, TAP and Rocha observed a flock in dense *cerrado* at the northern end of the serranía. Although usually observed in flocks of 6–9 individuals, a lone pair of *C. cristatellus* was building a large stick nest 7 m up in branches of an isolated tree in rocky, open habitat near camp 2 on 25 August. These are the westernmost records for this *cerrado* inhabitant and the first Bolivian records of the species. The only record of another jay species for the park is a flock of *C. cyanomelas* seen by TJD in early September (1989) along the edge of taller forest in the same area where TAP had observed *C. cristatellus* in August. Although both species are known to occur together (within the same flocks occasionally) in central Brazil (Ridgely & Tudor 1989), they appear separated in this part of Bolivia.

TOOTH-BILLED WREN *Odontorchilus cinereus**

This poorly-known canopy wren was fairly common in a narrow zone of tall, humid forest within 2 km of the serranía at Arroyo del Encanto and Los Fierros (see Bates *et al.* 1989). Pairs and presumably family groups of 3–4 individuals were observed there with 4 large, mixed-species flocks, all of which also contained *Xenops tenuirostris*, *Tolmomyias assimilis*, *Hylophilus muscicapinus* and *Tachyphonus cristatus*. Although quite inconspicuous as they foraged within foliage along slender branches in the uppermost canopy (25–35 m), both members of pairs sang persistently. The most commonly heard song was a vibrating, high-pitched trill about 3 seconds long, similar to that of a Pine Warbler *Dendroica pinus*. In response to playback, and while counter-singing, some individuals gave 1–2 very different song types, such as a high-pitched series of *sweet* notes (LNS). A specimen was collected by Carmelo Peña from a canopy flock well west of the plateau, 13 km SW of Piso Firme on 25 June. On 1 September near Arroyo del Encanto, TJD collected a female, with an unshelled egg in its oviduct, from a canopy flock that included 3 other *O. cinereus*. TJD also collected a male on 11 September near Los Fierros. These are the first records for Bolivia for this species previously known only from Brazil between the upper Rios Madeira and Tapajos (Meyer de Schauensee 1966).

BUFF-CHEEKED GREENLET *Hylophilus muscicapinus**

This widespread Amazonian species was common in the canopy of tall forest throughout the park, including the large forest islands on top of the plateau. Pairs were heard (and occasionally seen) in most mixed-species canopy flocks. On 13 July, AC collected the first Bolivian specimen in the forest fragments at camp 1. On 31 August, TAP collected a male, with testes measuring 7×5 mm, from a canopy flock near Los Fierros. TJD collected three more males in early September from the same area.

RED-SHOULDERED TANAGER *Tachyphonus phoenicius**

Two females of this species were collected in July at camp 1, along the edges of forest fragments bordering *cerrado*, and TJD collected a male near Los Fierros on 7 September in stunted forest-edge bordering grassland. These are the first Bolivian records of this species, that shares with several other species now known from the park, such as *Tangara cayana* and *Sicalis citrina*, a patchy distribution in Amazonia reflecting the island-like distribution of relict grasslands and associated woodlands.

BLUE-NECKED TANAGER *Tangara cyanicollis*

This species has an unusually disjunct range (but see *Carduelis olivacea* below) that includes the lower slopes of the eastern Andes from Venezuela to Bolivia and the northern edge of the Brazilian shield in central Brazil (Isler & Isler 1987). We found it to be uncommon in the canopy of all forest sites visited in 1989. Although most frequently found in small groups of 3–4 along the edges of gallery forest and large forest islands, a few were also noted in the canopy of open *cerrado* woodland within 200 m of taller forest. A female collected by CAM at camp 1 on 28 June had an enlarged oviduct 9 mm wide, and another female collected by GHR on 7 October at camp 2 had an ovum 5 mm in diameter. Our Huanchaca specimens may represent an undescribed form that differs from other populations in having more extensive dark blue on the throat.

BLUE FINCH *Porphyrosipiza caeruleascens*

This species was one of the most common passerines in *campo rupestre* at the southern end of the serranía. We collected a series of 14 birds including adults of both sexes and young males that had not reached adult plumage. In late August, Blue Finches were found primarily in small groups of 4–6 individuals, including both adult and immature males and females. These were frequently in association with pairs or families of Black-throated Saltators *Saltator atricollis*, another patchily distributed *cerrado* species. Ridgely & Tudor (1989) list the species' habitat as "open grassy *cerrado* with scattered trees"; but in the PNNKM these finches were most common in *campo rupestre*, where they foraged on the ground and flushed to the tops of rocks or bushes when disturbed. Groups of up to six individuals were noted in unburned, streamside brush in days immediately after a fire swept through much of the area in early October. Shortly after this, males were singing from exposed perches throughout the burned *campo rupestre*. Parker & Rocha (1991) provide more behavioural information from a recently discovered population on the Cerro San Simón, Dpto. Beni, c. 150 km NW of PNNKM.

The Huanchaca records may be the first undoubted occurrence of *P. caerulescens* in Bolivia. The only previous record from Cuevo, Dpto. Chuquisaca (Laubmann 1930), has been questioned (Ridgely & Tudor 1989) because the specialized habitat of this species has not been reported from west of the Brazilian shield plateaus. Ridgely & Tudor (1989) list *P. caerulescens* as a species whose status "is cause for concern". The extensive rocky *campos* of the Serranía de Huanchaca undoubtedly support one of the largest protected populations of this species.

On a taxonomic note, we agree with Ridgely & Tudor (1989) that *Pophyospiza* does not belong in the genus *Passerina* (*contra* Paynter 1970). We see little vocal or behavioural similarity between *P. caerulescens* and any member of the Cardinalinae. Its songs, thin wispy series of *sweeu* notes, as described by Ridgely & Tudor (1989), are similar to those of emberizids such as *Volatinia* and *Haplospiza*, and very different from the melodious whistled songs of buntings, grosbeaks and saltators.

BLACK-AND-TAWNY SEEDEATER *Sporophila nigrorufa*

On 29 August, TAP observed at least two adult male *S. nigrorufa* among flocks of 600 or more *Sporophila* spp. in dry (but seasonally flooded) grassland at the western base of the serranía south of Los Fierros. *S. nigrorufa* was known from fewer than 10 specimens and a few sight records from extreme eastern Bolivia and southwestern Brazil (Ridgely & Tudor 1989). The birds foraged on grass seeds in association with numbers of *S. ruficollis* (20–30 males) and *S. hypochroma* (10–20 males), as well as smaller numbers of *S. hypoxantha*. Most individuals in these flocks were unidentifiable juvenile and female *Sporophila*. From these flocks, we obtained a series of *S. ruficollis* males, and one male *S. hypochroma*, collected by TJD.

COAL-CRESTED FINCH *Charitospiza eucosma**

On 7 October, TJD collected a male from a pair found in recently burned *campo* with scattered trees and bushes. A more thorough search of the same area over the next several days revealed the presence of at least 15 singing males and an equal number of females. The birds' behaviour suggested they were in the process of establishing territories. Four males collected at this time had testes averaging 6×3 mm, but 4 females showed no enlargement of the ovary. As with *Geobates poecilopterus*, we feel certain that this species appeared in the area within days of a fire that burned a large expanse of *campo*. *Charitospiza eucosma* was seen only in burned wooded *campo*. In central Brazil, this species has a patchy distribution in both *campo sujo* and taller *cerrado* (TAP pers. obs., Ridgely & Tudor 1989), and its local movements have been associated with fires (Ridgely & Tudor 1989, Cavalcanti 1990). A pair that established a territory in charred *cerrado* habitat in Brasília National Park remained within its c. 2 ha territory for at least 3 years following the initial fire (i.e., long after the vegetation returned to its original lush condition). In another area c. 30 km NE of Brasília, TAP and A. Negret found 4–5 pairs of *Charitospiza* in October 1985, in c. 3 ha of recently burned *cerrado* with small trees and bushes. With little effort, 3 nests each with three eggs were found.

OLIVACEOUS SISKIN *Carduelis olivacea*

Two females collected by TJD in *cerrado* at the edge of a forest fragment on the southern end of the serranía on 2 and 13 October, have been tentatively identified as *Carduelis olivacea*, previously known in Bolivia from montane forests in Dptos. Cochabamba and La Paz (Remsen & Traylor 1989). In comparisons with the similar *C. magellanica santaecrucis*, the PNNKM birds are smaller (in wing length, tail length, and culmen length), and have yellow instead of white feathers on the lower belly. An additional difference appears to exist in bill colour, which is lighter (grey to dusky horn) in *C. magellanica*. Whether the Huanchaca specimens represent an isolated and possibly undescribed form of *C. olivacea* is not yet determined; however, at least two other taxa, *Tangara cyanicollis* and *Odontorchilus branickii/cinereus*, have similar Andean/central Brazilian distributions.

Cuello specimens

J. Cuello collected the following specimens from this region before specimens or sight records reported by Bates *et al.* (1989) and Cabot *et al.* (1988); hence, Cuello's records represent the first for Bolivia. All records are from Dpto. Beni: *Pyrrhura rhodogaster* (AMNH 791770), *Nyctiprogne leucopyga* (AMNH 791795-802), *Pteroglossus bitorquatus* (AMNH 791872), *Piculus flavigula* (AMNH 791906-7) and *Dendrocolaptes concolor* (AMNH 791936-7).

Conservation

The extensive areas of *campo* and *cerrado* habitats in the Parque Nacional Noel Kempff Mercado, both on top of and below the Serranía de Huanchaca, have become extremely important in a conservation sense due to massive destruction of these habitats in central Brazil. The largest remaining pristine examples of *campo limpo*, *campo sujo*, *campo rupestre*, and *cerrado* (*sensu* Eiten 1978) probably occur within this park. Together, these habitats encompass c. 500,000 ha of the park, primarily on top of the plateau. Large populations of numerous potentially threatened bird taxa occur within the park, including 6 species endemic to the Brazilian shield (*Geobates poecilopterus*, *Euscarthmus rufomarginatus*, *Antilophia galeata*, *Cyanocorax cristatellus*, *Porphyrospiza caerulescens*, and *Charitospiza eucosma*) that have been not previously reported from Bolivia. The Serranía de Huanchaca is apparently the western distributional limit for these species. Future zoological and botanical surveys will no doubt reveal the presence of many more animal and plant species now considered endemic to central Brazil, as well as smaller numbers of taxa endemic to the plateau itself. The conservation importance of PNNKM is further increased by the presence of a surprisingly rich avifauna in lowland, evergreen forest along both the eastern and western sides of the serranía (Bates *et al.* 1989).

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Geographic variation in the Sharp-billed Treehunter *Heliobletus contaminatus*

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The Sharp-billed Treehunter *Heliobletus contaminatus* is a small (13–15 g) forest-dwelling furnariid of southeastern Brazil, from Espírito Santo to Rio Grande do Sul, eastern Paraguay, and northeastern Argentina (Misiones) (Meyer de Schauensee 1966). It is a common species in tall forest, where it associates with mixed-species flocks (Sick 1985, Stotz, pers. obs.).

The species was described from specimens collected at Nova Friburgo, Rio de Janeiro (Hellmayr 1925), and has been considered monotypic (Pinto 1978, Vaurie 1980). We have examined 60 specimens of *H. contaminatus* in the Museu de Zoologia da Universidade de São Paulo (MZUSP) and the Museu Nacional do Rio de Janeiro (MNRJ). We discovered that the population distributed south of the northeastern part of the state of São Paulo is quite distinct from the more northerly populations. We propose to name this population

***Heliobletus contaminatus camargoi* subsp. nov.**

Holotype. ♂, MZUSP 27638, Porto Cabral, Rio Paraná, São Paulo, Brazil. Collected 26 October 1941 by J. Lima.